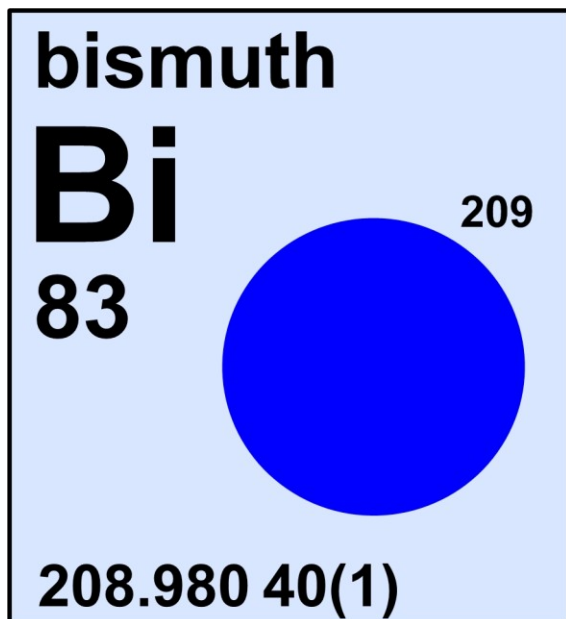


bismuth

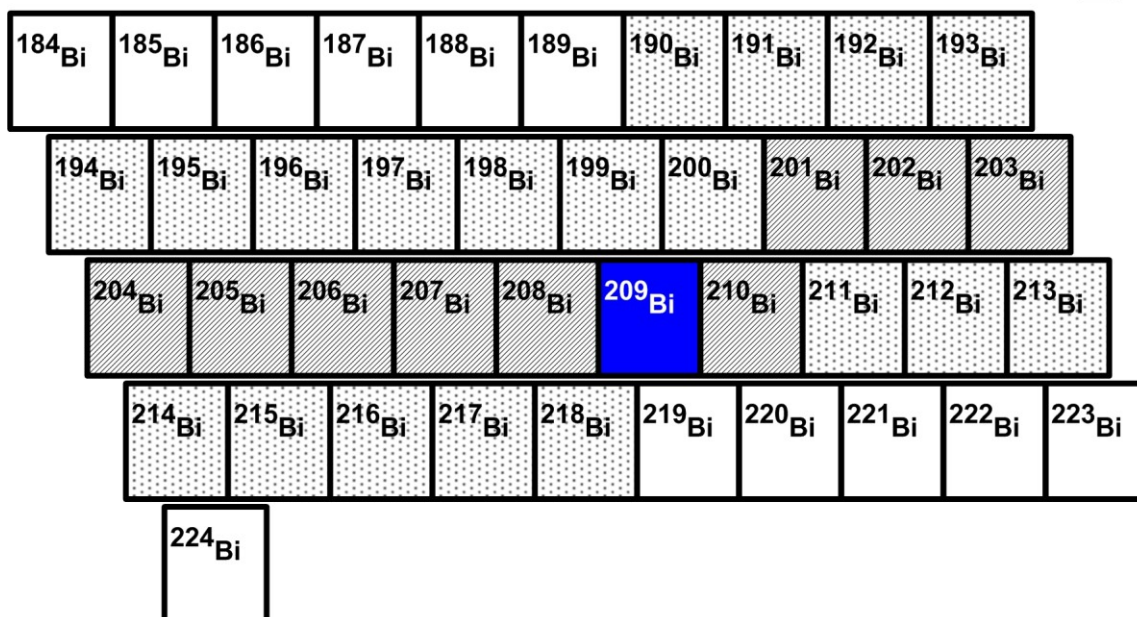


Stable isotope	Atomic mass*	Mole fraction
²⁰⁹ Bi	208.980 3987	1.0000

* Atomic mass given in unified atomic mass units, u.

Half-life of radioactive isotope

Less than 1 second
 Between 1 second and 1 hour
 Greater than 1 hour



Important applications of stable and/or radioactive isotopes

Isotopes in medicine

- 1) ²¹²Bi and ²¹³Bi are both used in medicine for radioimmunotherapy as bismuth labeled monoclonal antibodies to treat cancer cells from melanoma (skin cancer) and ovarian cancer.

- 2) ^{212}Bi is being studied for radioimmunotherapy of leukemias and for targeting the vascular endothelial cells of tumors.

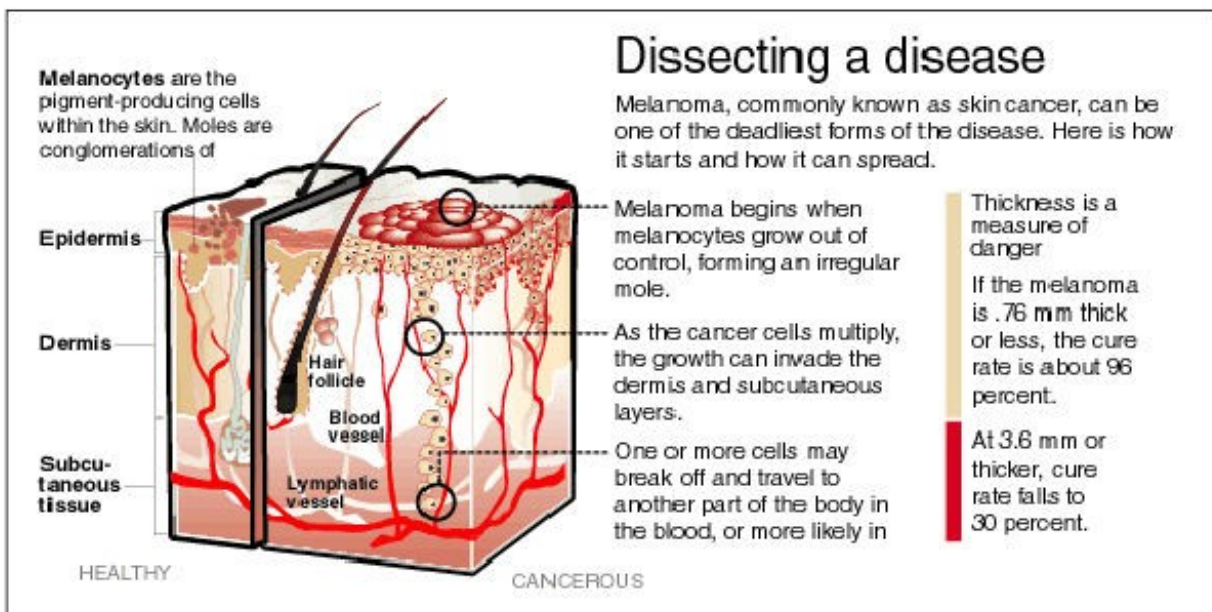


Figure 1: Melanoma diagram. (Image Source: The University of Arizona).

Isotopes in industry

- 1) ^{209}Bi is bombarded with neutrons in a nuclear reactor to form radioactive ^{210}Bi , which decays to ^{210}Po . ^{210}Po is mainly used in static eliminators in machinery.